

CLAIMS

We claim:

1. A device for measuring the flow rate of a fluid in a wellbore, comprising:
 - a variable orifice valve; and5 a differential pressure measurement mechanism for measuring the pressure loss of the fluid across the variable orifice valve.

2. The device of claim 1, wherein the variable orifice valve comprises a sleeve valve.

10

3. The device of claim 2, wherein the variable orifice valve is mounted on a side pocket mandrel.

4. The device of claim 1, wherein the variable orifice valve is mounted on a side pocket mandrel.

- 15 5. The device of claim 1, wherein the differential pressure measurement mechanism comprises:

20 an outer pressure measurement device for measuring the pressure upstream of the variable orifice valve; and

an inner pressure measurement device for measuring the pressure downstream of the variable orifice valve.

6. The device of claim 1, wherein the differential pressure measurement mechanism comprises a differential pressure measurement device for measuring both the pressure downstream and upstream of the variable orifice valve.

5 7. The device of claim 1, wherein:

the variable orifice valve is adapted to allow flow of the fluid from an annulus of the wellbore to the interior of a tubing string disposed in the wellbore; and
the differential pressure measurement mechanism measures the pressure of the fluid in the annulus and in the tubing string interior.

10

8. The device of claim 1, wherein the fluid is a single phase liquid.

9. The device of claim 1, wherein the fluid is a single phase gas.

15 10. The device of claim 1, wherein the fluid includes a water and an oil content.

11. The device of claim 1, wherein the fluid is a two phase liquid and gas flow.

12. The device of claim 1, wherein the fluid is a multi phase flow.

20